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Personal Report 1: RFID Research

**Option 1**:

XTREME RFID Rivet Jr Tag

Cost: $19 + SH for a pack of 10 [1]

Key features

* + - 1. RF Protocol: ISO 18000 [2]
      2. Readable/Writable [2]
      3. Read range: up to 4.3 Meters (Typical) [2]
      4. Write range: up to 2.4 Meters (Typical) [2]
      5. Operational temperature: -40C to 85C [2]
      6. Chemical Resistant 1[2]
      7. Ingress Protection rating: IP69K [2]

RFID tag will maintain full functionality in temperatures ranging from -20ºF to 180ºF. -40ºF to 185ºF

RFID tag will have an Ingress Protection Rating (IP) of 55. IP68

RFID tag will be passive-energized by RFID scanner. Passive RFID Tag

RFID tag will be maximum of 5 centimeters long, 5 centimeters wide, and 2 centimeters thick.

86 L x 25 W x 4 H (mm)

It has holes so it could be worn as a necklace.

**Option 2**:

Omni-ID® Exo 750

Cost: $29 + SH for a pack of 10 [3]

Key features

* + - 1. RF Protocol: EPC Class 1 Gen2 [4]
      2. Readable/Writable [4]
      3. Read range: up to 11 Meters (Typical) [4]
      4. Write range: up to 5 Meters (Typical) [4]
      5. Operational temperature: -40C to 85C [4]
      6. Chemical Resistant 1[4]
      7. Ingress Protection rating: IP68 [4]

RFID tag will maintain full functionality in temperatures ranging from -20ºF to 180ºF. -40ºF to 185ºF

RFID tag will have an Ingress Protection Rating (IP) of 55. IP68

RFID tag will be passive-energized by RFID scanner. Passive RFID Tag

RFID tag will be maximum of 5 centimeters long, 5 centimeters wide, and 2 centimeters thick.

51 L x 48 W x 12.6 H (mm)

It has holes so it could be worn as a necklace.

**Option 3**:

Ironside UHF RFID Tag

Cost: $9.46 + SH for a pack of 1 [5]

Key features

* + - 1. RF Protocol: EPC Class 1 Gen2 [5]
      2. Readable/Writable [5]
      3. Read range: up to 9 Meters (Typical) [5]
      4. Write range: N/A
      5. Operational temperature: -40C to 85C [5]
      6. Chemical Resistant 1[5]
      7. Ingress Protection rating: IP68 [5]

RFID tag will maintain full functionality in temperatures ranging from -20ºF to 180ºF. -40ºF to 185ºF

RFID tag will have an Ingress Protection Rating (IP) of 55. IP68

RFID tag will be passive-energized by RFID scanner. Passive RFID Tag

RFID tag will be maximum of 5 centimeters long, 5 centimeters wide, and 2 centimeters thick.

51.5 x 47.5 x 10.0 mm

It has holes so it could be worn as a necklace.

I tried to look into how we might be able to build our own RFID tag, but I couldn’t find anything that seemed as feasible as just buying some tags that already fit our specifications. Both of the above options are around the same except for one being a different shape than the other. There were a couple of variations of the Omni RFID tag that had around the same specs as the one I provided so if we needed to find a cheaper one I could do some more digging.

**References**

1. https://www.atlasrfidstore.com/xtreme-rfid-rivet-jr-tag-pack-of-10/

2. Cascade Engineering. (2014). *XTREME RFID Rivet Jr Tag*. [Online]. Available: http://xtremerfid.com/xtreme-tag%C2%AE-rivet-jr

3. https://www.atlasrfidstore.com/omni-id-exo-750-rfid-tag-pack-of-10/

4. http://www.omni-id.com/pdfs/Omni-ID\_Exo\_750\_datasheet.pdf

5. https://www.umd.com.au/itd/products/confidex\_ironside.html